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Diket : % E = 99,9 %

$$V_a = 50 \text{ ml} , V_o = 50 \text{ ml}$$

$$n = 5$$

$$W_A = 100\% - 99,9\% = 0,1\% = 0,001 \text{ gram}$$

Ditanya : $K_D = ?$

Jawab :

$$W_A = W_o \left(\frac{V_a}{V_a + K_D \cdot V_o} \right)^n$$

$$0,001 \text{ gr} = 1 \text{ gr} \left(\frac{50 \text{ ml}}{50 \text{ ml} + K_D \cdot 50 \text{ ml}} \right)^5$$

$$\left(0,001 \text{ gr} = 1 \text{ gr} \left(\frac{1}{1 + K_D} \right)^5 \right)^{1/5}$$

$$0,25 (1 + K_D) = 1$$

$$0,25 K_D = 1 - 0,25$$

$$K_D = \frac{0,75}{0,25}$$

$$K_D = 3$$

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Diket : % E = 90 %

$$W_o = 1 \text{ gr}$$

$$V_a = 100 \text{ ml}$$

$$W_A = 100\% - 90\% - 10\% = 0,1 \text{ gr}$$

$$V_o = 90 \text{ ml}$$

$$n = 5$$

Ditanya : X terlarut ?

Jawab :

$$\left[W_A = W_o \left(\frac{V_a}{V_o + V_a \cdot K_D} \right)^n \right]^{1/n}$$

$$W_A^{1/n} = 1 \left(\frac{V_o}{V_o + V_a K_D} \right)$$

$$(V_o + V_a K_D) = \frac{V_o}{W_A^{1/n}}$$



$$K_D = \left(\frac{\frac{V_c}{W_A^{1/n}} - V_a}{V_a} \right)$$

% E = 90% , maka

$$K_D = \left(\frac{\frac{100}{(0.1)^{1/5}} - 100}{90} \right)$$

$$K_D = \frac{\frac{100}{0.681} - 100}{90}$$

$$K_D = \frac{158.47 - 100}{90}$$

$$K_D = \frac{58.47}{90}$$

$$K_D = 0.64966$$

% E untuk 10 kali

$$(100\% - x\%) = 0.01 \text{ gr}$$

$$x\% = 1 - 0.01 \text{ gr}$$

$$x\% = 0.99 \text{ gr}$$

$$x\% = 99\%$$